

ANIMAL PRODUCTION - QUO VADIS?



P.J.K. Morgan

**INAUGURAL LECTURE DELIVERED ON ACCEPTING THE CHAIR OF ANIMAL
PRODUCTION AT THE UNIVERSITY OF THE NORTH ON WEDNESDAY,
7TH SEPTEMBER, 1981**

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Mr Vice-Chancellor, honoured guests, ladies and gentlemen -

I want to show you two recent discoveries that increase profit from animals.

We'll look at the present state of Animal Production, then follow by *firstly* discussing the knowhow necessary to increase production and *secondly* who should grasp this knowhow.

Lastly we'll look at a crisis in agriculture.

The study of animals can be broken down into Animal Production and Animal Science. Discoveries come from science or research. I was privileged to be invited to talk at Universities in Britain and the United States on new methods of reducing feeding costs. This information came from measurements over 8 years using cannulated animals. These animals are rather special. They are the first in the world to eat and produce normally. They do this because the cannulae don't hurt them.

By using radio-isotopes it's possible to measure where a grain supplement such as sorghum or maize is most efficiently digested. In the end I found that grain is best digested in the small intestine. This halves the amount of grain required by a cow producing milk off grass. In other words the cost of expensive grain feeding can be halved by a grain supplement that is digested in the small intestine.

I've been working on treating roughages, like winter veld grass, to improve their quality or producing ability since 1975. The problem with winter veld is that cattle are only able to eat enough of it to stay alive. They don't eat enough to also produce milk or meat. This is because the digestibility is only 40%. This means that only 40% of the nutrients are absorbed in the gut. At first I used Na OH i.e. caustic soda to increase digestibility. This process offers a marginal profit because it is not as effective as it should be.

In 1980 I started working on a new process. The results in the laboratory seemed promising because digestibility increased from 40 to 70%. I approached a company, which sells the reagent for another reason, for financial assistance. They took a lot of convincing but eventually agreed on R20,000 p.a. The CSIR paid another R10,000 p.a. to one of my honours graduates to conduct the research. Last Friday we obtained some interesting results. We had two groups of animals and fed one a feedlot or fattening diet. This consists of 80% maize and 5kg of feed was necessary to get 1kg of body mass gain. The other group received upgraded maize straw. You normally have to feed cattle about 20kg of this straw for them to gain 1kg of body mass. With upgraded straw only 6kg was required. What is exciting about this is that the feedlot diet costs more than twice that of upgraded maize straw. In other words the feed costs for fattening may be halved. This means that a feedlot that fattens 100,000 cattle per year could increase their profit from R1m to over R4m p.a.

The results with milk cows were just as promising. With the winter grass or

crop residues available in our area these results should be of practical significance to us as well. The process for upgrading grass is now being tried on hundreds of cattle on commercial farms. Its still an industrial secret so I can tell you no more.

Research, like the two experiments that I have just described, can only be conducted if facilities are available. Facilities will probably exist at this University in about 3 years.

The courses that we give at the University of the North are mainly in Animal Production and not Animal Science. This is because existing knowledge can increase production tremendously in this area, *if used properly*.

Its interesting to note that Mr Oppenheimer rates agricultural development as the Number 1 priority for a developing country. His logic is: How can a country afford to develop its industries if it has to pay for imported food?

HOW CAN WE INCREASE FOOD PRODUCTION IN OUR AREA?

Lets learn from the past. There have been over 200 farming schemes introduced into Lebowa by officials of the S A Government over the last 30 years. Its difficult to think of any that have succeeded after 10 years. Why do they fail?

One reason is that the official in charge of a project wants a good merit evaluation for promotion. His schemes must produce. Government labourers end up doing most of the work to ensure success. The farmers thus don't entirely understand what's going on and lack interest. When the official leaves, the scheme is not self-perpetuating, because of lack of knowhow and support.

Lesson - a good farmer understands what he is doing and is interested. Our graduates must not tell a farmer what to do. They need patience to show and teach farmers. Our graduates' aim should be to make farmers independent.

What knowhow do our graduates require? Let beef production be an example. In Africa typical calving % are below 30%. Extra cattle can hardly be sold because most calves merely replace cattle that died. Farmers like Derek Ivy or Dr van den Ende know how to obtain calving % of more than 85%. They can sell most of their calf crop because they are not needed for replacements. They do a service to their country. What service does a farmer do who keeps cattle for security?

The *more* farmers and politicians know about the advantages of a good calving % the more pressure there will be for change. Its not only our graduates that must bring pressure to bear but also our University. So the knowhow that our graduates need is the following: (In order of priority)

- 1 If cows are not in good condition most wont calve
- 2 Good condition comes from good veld management
- 3 Diseases need to be eliminated (this receives some attention)
- 4 Indigenous cattle are hardy but don't produce enough meat. Breed hardy **Producers.**

Without good veld management no breed of cattle can produce meat for sale.

We must not forget that our graduates will also have to advise the small farmer. He has a few indigenous pigs or chickens and would like more meat or eggs. These animals have an important quality - they are disease resistant. They survive, unlike imported animals. But if you feed them to produce more meat or eggs they need twice the food to produce a kg of meat or a dozen eggs (that the imported animals require).

Conclusion : It's cheaper to buy meat or eggs than to feed indigenous animals for extra production.

All our hardy indigenous animals can be bred and selected for greater efficiency. So even under extensive conditions its possible to produce more meat or eggs.

Our students must also know how to manage a modern piggery, poultry unit or dairy. After all they are likely to be made production managers of a Kibbutz-type intensive production system.

To sum up KNOWLEDGE at the farmer and political level, from our graduates and this University, can bring about evolution in agriculture in this part of the world. The goal should be a steady increase in production.

There is a crises in agricultural training at the University of the North. Students will start to graduate in one year's time. The problem is that we haven't yet got a functional farm for student practicals. Is this important? Let's look at an example. Submerged dipping of cattle is wisely used in Lebowa. Students should have practice in making up dips to the correct strength. If they only see this operation they could easily make the dipping solution too strong in a demonstration after they graduate - killing the farmers cattle. What sort of impression would farmers then have of this Universities' graduates? A functional farm which allows our students to manage cattle, goats, sheep pigs and poultry in practice is essential next year, otherwise we shall produce half-baked graduates.

On this rather alarming note I nonetheless have pleasure in accepting this chair - Mr Vice-Chancellor.

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